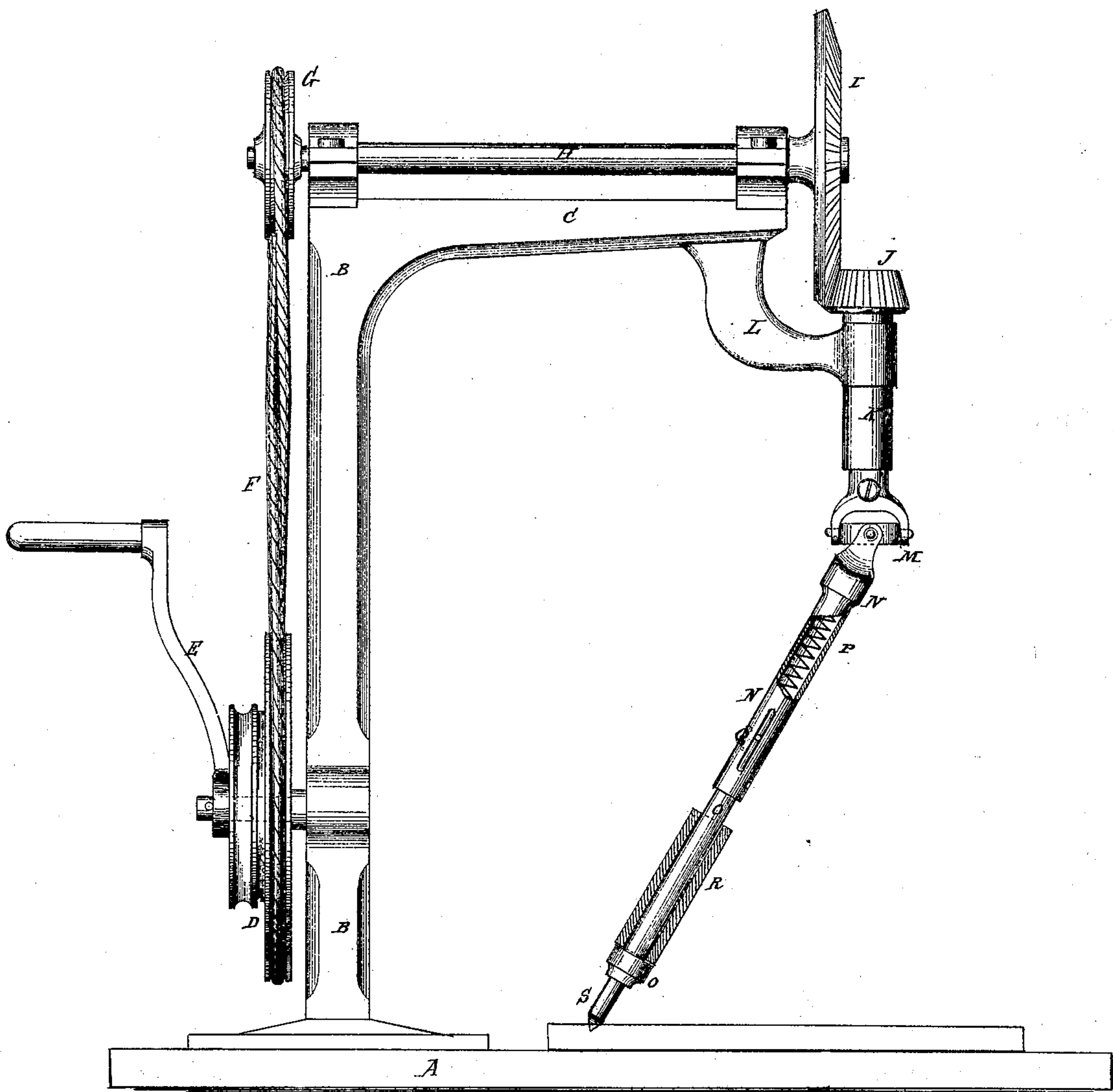


C. J. Coulter,
Engraving Mach.
No. 10,3576. Patented May 31. 1870.



Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES J. COULTER, OF SEVILLE, OHIO.

IMPROVEMENT IN ENGRAVING-MACHINES.

Specification forming part of Letters Patent No. **103,576**, dated May 31, 1870.

To all whom it may concern:

Be it known that I, CHARLES J. COULTER, of Seville, in the county of Medina and State of Ohio, have invented a new and Improved Machine for Engraving, Drilling, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

The figure is a side view of my improved machine, parts being broken away to show the construction.

My invention has for its object to furnish an improved machine which shall be so constructed and arranged that it may be used for engraving, for which use it is especially designed, for drilling straight or oblique holes, and for various other uses; and it consists in the construction and combination of the various parts of the machine, as hereinafter more fully described.

A is the bed-plate of the machine, upon which the work is placed and to which it is secured. B is a standard, the lower end of which is secured to the bed-plate A, and to the upper end of which is rigidly attached, or upon it is formed, an arm, C, projecting at right angles over the bed-plate A. D is a grooved coned pulley, which is pivoted to the outer side of the lower part of the standard B, and which has a crank, E, formed upon or connected with it, by means of which the machine is operated. F is a band which passes around the pulley D, and around a pulley, G, attached to the end of the shaft H.

The shaft H revolves in bearings attached to the upper side of the arm C, and to its other end is attached a bevel-gear wheel, I, into the teeth of which mesh the teeth of the small bevel-gear wheel, J, attached to the upper end of the shaft K. The shaft K revolves in bearings in the outer end of the curved arm L, the inner end of which is formed upon or attached

to the under side of the outer end of the arm C.

To the lower end of the shaft K is connected, by a universal joint, M, the upper end of the shaft N, which is made hollow, and in which is placed the upper part of the tool-holder O, which is connected with the hollow shaft by a coiled spring, P, one end of which is secured to the said hollow shaft N, and the other end of which is secured to the upper end of the tool-holder O.

Q is a pin which passes through the upper part of the tool-holder O, and through a longitudinal slot in the hollow shaft N. R is a sleeve or tube placed upon the lower part of the tool-holder O, and the lower end of which rests against a collar formed upon the lower part of the tool-holder O.

The sleeve R is designed to serve as a handle for holding and guiding the tool while at work, the said tube being stationary, while the tool-holder O revolves within it. To the lower end of the tool-holder O is attached an engraving-tool, a drill, or other tool, according to the particular work to be done.

By this construction, by turning the crank E the tool will be revolved rapidly, and by means of the coiled spring P and sleeve R the tool S may be moved about over the work as may be desired.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination of the bed-plate A, standard B, arm C, pulley D, crank E, band F, pulley G, shaft H, bevel-gear wheels I J, shaft K, curved arm L, universal joint M, hollow shaft N, tool-holder O, coiled spring P, pin Q, and tube or sleeve R with each other, substantially as herein shown and described, and for the purpose set forth.

CHARLES J. COULTER.

Witnesses:

JOSEPH ROSS,
T. J. COULTER.